

**UNDERWATER FORENSICS & EDUCATIONAL FOUNDATION  
(UFEF)**

**STANDARD OPERATING  
GUIDELINES**

**04/2025**

**REVISION 1**

# UNDERWATER FORENSICS & EDUCATIONAL FOUNDATION S.O.G'S

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## OVERVIEW AND S.O.G. ADOPTION:

- 1 The Standard Operating Guidelines contained in this document is designed

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to be GUIDELINES for UFEF'S dive operations and to comply with NFPA Dive regulation found in 1670 and NFPA 1006

2. The safety of all personnel is the number one priority; therefore any part of these S.O.G.'s may be deviated from to satisfy this task with good cause.
3. Due to the large amount of variables that are encountered in dive rescue and recovery calls, no single document can contain Standard Operating Guidelines for all situations. The Dive Coordinator and/or the dive safety officer will have the discretion to deviate from the attached S.O.G.'s for the sake of safer or more efficient operation, if they deem it necessary and as each situation demands. This decision will be based upon their training and experience.
4. The ability to deviate from any or all parts of the S.O.G.'s and or the accepted UFEF practices, does not entitle the individual doing so to act in a reckless or negligent manner.
5. These Standard Operating Guidelines supersede any and all previously existing S.O.G.'s

Adopted: On this \_\_\_\_\_ day of \_\_\_\_\_ in the year of \_\_\_\_\_

\_\_\_\_\_  
Board Member Name/ Title / Signature

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## **OUR MISSION STATEMENT**

Is to support the professional development of public safety divers through specialized educational opportunities, while conducting expert underwater forensic searches and recoveries to aid investigations and bring closure to families

### **SECTION 1: PURPOSE**

The UFEF dive team will work in conjunction with various agencies and mutual aid agencies to determine the nature of the call and the parameters of the operation. Due to changing requirements, conditions, experience of the team and standards, this document is to be considered a guideline for the UFEF dive team and its operations.

This manual provides guidelines for the entire team, some general and some very specific, covering functions and operation. Every member of the team is required to know these guidelines and sign off that they will follow these guidelines.

No manual can cover all possible contingencies, which the team will encounter. With this in mind, the prime consideration must be the SAFETY of all team members by a constant assessment of the RISK/BENEFIT factor in all missions undertaken by the team.

Members of the team will need to be good team players, but at the same time, will need to be able to function independently when the situation arises. Independent function does not sacrifice safety and is not detrimental to the team functioning as a unit.

This manual has been compiled from multiple reference sources and will give all team members a firm guideline in public safety diving during UFEF underwater search & recovery operations.

## SECTION 2: UFEF TEAM GOALS

Operate in a safe and efficient manner so that everyone comes home all while providing:

- Underwater Search & Recovery Services to the Private, Public, Municipalities, Counties, and State agencies
- Provide these services in a safe and professional manner within the teams capabilities.
- Encourage education, training, and knowledge of Public Safety Diving.
- Aid in the recovery of evidence, vehicles, and drowning victims while maintaining professionalism and safety.
- Participate in the securing, evaluation, and investigation of water incidents when applicable and when requested to do so by the lead investigative agency.

## SECTION 3: TEAM ORGANIZATION

### 3.1 DIVE COORDINATOR:

The Dive Coordinator (DC) functions as the operations section chief during dive operations, supervising the overall dive operation and works closely with the dive safety officer. The coordinator must have good view of the overall scene. In the absence of the Dive Coordinator and/or Assistant Dive Coordinator, A certified, UFEF Board Approved Dive Supervisor can be assigned to assume the responsibility.

#### Responsibilities Include:

- Responsible for all directions and all activities of the team. This direction will be accomplished through written orders, oral orders, policies, directives, and guidelines.
- Perform a hazard and risk analysis of whether the operation should be undertaken immediately, later, or never.
- The (DC) will have EMS, when available, evaluate the blood pressure, and overall appearance of divers to help make safe deployment decisions before and after the dive.
- The (DC) will force No member to perform an operation that he or she is unwilling to make.
- Maintain a file of call sheets, assignments, and complete the required records of each mission.
- Keep all standard operating guidelines current and compliant with NFPA 1670 & 1006
- Maintain a current list of qualified members and ensure members follow all the team guidelines

## **3.2 ASSISTANT DIVE COORDINATOR:**

The Assistant Dive Coordinator will be responsible for coordinating activities with the Dive Coordinator.

### **Responsibilities Include:**

- Follow the direction and control of the Dive Coordinator.
- Responsible for checking that the training and equipment of all support teams meets or exceeds all NFPA standards
- Submit in writing a list of trained team members to the Dive Coordinator along with their recertification sheet as per the NFPA & I.A.D.R.S. for the yearly certification and placed in the divers information and training folder.
- Will assist all surface support personnel during all dive operations
- Will assist Dive safety officer during dive operations
- Will Assume Dive Coordinator position in the absence of the (DC)
- Makes sure all S.O.G's are followed by members and support teams
- Meet all training requirement outlined in this document

## **3.3 DIVE SUPERVISOR/UCI COMMANDER:**

The Dive Supervisor/UCI Commander must have all required training as a Public Safety Diving Supervisor/UCI commander and be one of the most experienced divers on the scene. If a certified supervisor/UCI commander is not available, the Dive Coordinator may assume this position or appoint the next most qualified person.

The Dive Supervisor/UCI commander will oversee all divers and the diver's record keeping during the dive operation or training drill. The supervisor/UCI commander will work directly with the Dive Safety Officer and Dive Coordinator on all operational levels.

### **Responsibilities Include:**

- Scene assessment and documentation
- Completion of crime scene sketch
- Over-seeing tenders and that search patterns are maintained
- Can make decisions to repeat search patterns
- Confirms that all diving personnel have been cleared to dive by EMS when available before and after each dive
- Responsible for keeping all diving operations compliant with NFPA 1670 & 1006
- Responsible for documenting and overseeing the chain of custody when required



## **3.4 TENDER SUPERVISOR:**

The Tender Supervisor must have all required training as a Public Safety Diving Tender. The Tender Supervisor has the very critical job of backing up the tenders during operation and record keeping.

### **Responsibilities Include:**

- Logging all diver's time in and out of water
- Logging starting and ending PSI
- Maintaining records of the search pattern and locations of the divers in operation
- Reports dive operations and findings to the (DC)

## **3.5 DIVE SAFETY OFFICER:**

The Dive Safety Officer oversees checking in all personnel on the scene, along with:

### **Responsibilities Include:**

- Checking scene safety
- Will be stationed at the entrance to the "HOT" zone
- Establishing the "HOT" and "WARM" zones of the dive operations
- Responsible for checking that all divers have the proper certification for operating in "HOT" Zone and have been cleared by medical personnel to dive
- Responsible for checking that the training and equipment of all support teams meets or exceeds all NFPA standards
- Make sure anybody entering "WARM" zone has proper PFD and PPE as described
- Can suspend any dive operation if feels it is to unsafe to operate
- Over-see decontamination operations and complete check list

## 3.6 QUALIFIED DIVER

The primary role of the qualified diver is below-surface operations during daylight hours in environments that are free of ice, swift water and flooding conditions to assist Public Safety Divers. The qualified diver reports directly to dive coordinator and assists Public Safety Divers

### Minimum Training Requirements:

- Possess an Open Water certification from a Nationally recognized agency, excluding resort certifications
- Must be Dry suit trained by Nationally recognized agency, when conditions require
- Passes annual waterman ship skills test issued by International Association of Dive Rescue Specialists (IADRS)
- Pass annual basic SCUBA skills evaluation
- Keeps personal dive log when applicable

### Minimum PPE and Equipment:

- Dry suit and appropriate thermal protection, when applicable
- Full-face mask with communication device or mask and regulator if conditions allow
- Hood
- Rescue Harness or Harness style Back plate
- (2) First stage Regulator's
- 80cuin air cylinder or larger with pony bottle
- Redundant air supply with regulators and pressure gauge
- Weight system
- Depth and air gauge and/or dive computer
- Fins
- Compass, when applicable
- 1 pair of shears and a minimum of 1 alternate cutting device
- Audible and/or visual signaling device
- Dive log
- Surface marker buoy and/or Lift bag, when applicable
- BCD or back plate and wing style

## 3.7 PUBLIC SAFETY DIVER

Personnel trained in below-surface operations in swift water less than 1.5 knots, flood environments, contaminated water, and are permitted, when certified, to operate during night and Ice diving operations.

### Responsibilities include:

- Reports to Dive Coordinator, Assistant Dive Coordinator, and/or Dive Supervisor
- Recovery of victims, evidence, and vehicles from below the surface
- Assist agencies with recoveries while maintaining chain of custody

### Minimum Training Requirements:

- Must meet "Technician Level" for water search & rescue incidents as defined in NFPA 1670 & 1006
- Possess an Open Water certification from a Nationally recognized agency.
- Trained in underwater environments and equipment similar to the ones they may encounter
- Dry suit and full face mask certification from a Nationally recognized agency
- ERDI 1 Training or a certification from a Nationally recognized agency
- Passes annual waterman ship skills test issued by International Association of Rescue Specialists (IADRS)
- Pass annual basic SCUBA skills evaluation
- Keeps personal dive log up to date
- Maintain all personal dive equipment based on manufacturer recommendations and keep in safe working order.

### Minimum PPE and Equipment Required:

- Dry suit with built-in hood, dry gloves and appropriate thermal protection
- Full-face mask and back up half mask
- BCD or back plate and wing style
- Rescue Harness or Harness style Back plate
- Two first stage environmentally sealed Regulators
- 80cuin air cylinder or larger
- Redundant air supply with regulators and pressure gauge
- Weight system, depth gauge, and air gauge
- Dive tables with timing device and/or dive computer
- Fins when appropriate
- 1 pair of shears and 2 alternate cutting devices
- Dive log
- Surface marker buoy and/or Lift bag

## 3.8 TENDER:

Personnel trained in the responsibilities of diver safety and provides control of search patterns from the surface of the water or Boat. The primary role of a Tender is tactical support for the divers and to do all the heavy lifting for their diver.

### Responsibilities include:

- Reports directly to Tender Supervisor, Dive Supervisor, and/or (DC)
- Full working knowledge of UFEF team S.O.G's
- Full working knowledge of all safety plans and UFEF rope pull signals
- Assist divers with donning and doffing gear
- Assist divers during all phases of de-contamination
- Complete a full visual inspection of divers gear before they enter water
- Have ability to identify and address any problems with diver equipment
- Maintaining communication with diver at all times
- Assist with evidence recovery and maintaining chain of custody
- Complete crime scene sketches
- Maintain a dive log for divers if Tender Supervisor is not available

### Minimum Training Requirements:

- Must meet "Technician Level" for water search & rescue incidents as defined in NFPA 1670 & 1006
- ERDI Tender Certification or certification from a Nationally recognized agency
- Trained in underwater environments similar to the ones they may encounter
- Pass annual watermanship skills test issued by International Association of Dive Rescue Specialists (IADRS)
- Pass annual basic SCUBA equipment assembly skills evaluation
- Keeps personal dive log

### Minimum PPE and Equipment:

- Appropriate thermal protection
- US Coast Guard approved Type III personal floatation device
- Proper gloves and boots for the environment
- Timing device and compass, when applicable
- (1) pair of shears and (1) alternate cutting device
- Audible and/or visual surface signaling device

## **3.9 ASSISTANT TO DIVE OPERATIONS (TOPSIDE):**

Members who can observe all water rescue personnel and provide shore-based support during operations

### **Responsibilities include:**

- Reports directly to Dive Coordinator or Dive Supervisor
- Mobilizing, demobilizing, and staging land-based vehicles
- Retrieving, staging, and stowing team equipment
- Restricted from operating below the surface or from watercrafts

### **Minimum Training Requirements:**

- Must meet "Awareness Level" for water search & rescue incidents as defined in NFPA 1670 & 1006

### **Minimum PPE and Equipment:**

- Appropriate thermal protection
- US Coast Guard approved Type III personal floatation device
- Proper Gloves and boots for the environment
- PPE

## **SECTION 4: MEMBERS RESPONSIBILITIES**

### **4.1 OVERVIEW OF RESPONSIBILITIES**

A reliable team member is one who actively participates in drills, training and actual operations, never shortcutting procedures. Members must be familiar with team procedures and works as a team player.

- The members must be a certified public safety diver, qualified diver, or tender and have a working knowledge of using any equipment needed for that particular operation
- Each member will have an understanding of physics and physiology as it relates to the underwater environment and SCUBA diving
- During every dive the use of dive tables with timer and/or a dive computer is required.
- The public safety diver will have to be able to deal with various underwater environments and conditions that they may encounter. At any point the diver deems that the conditions are unsafe they are to end the dive and make a proper ascent to the surface.
- Divers should be able to identify and manage dive-related maladies(sickness), including psychological and physiological stress, air embolism and decompression sickness
- Dive team members should be able to recognize and manage the impact of near drowning

- Divers when available should have electronic communication (Dive comm.) If dive comm system is not available line pull signals will be used for communication.
- Max depth for all public safety dives is 65', NO exceptions unless diver has certifications and training past 65'.
- Yearly physical and swim/scuba test must be completed and submitted to the (DC)
- Divers must be able to manage air supply and stay with the rule of thirds, any divers returning with less than 500psi in a non-emergency will be considered in violation of standards per NFPA 1670 and must document why it occurred

## 4.2 PHYSICAL REQUIREMENTS OF TEAM MEMBERS

- Members must be able to swim against strong currents, hold on to bodies, disentangle themselves and handle heavy gear.
- Must pass Annual SCUBA skills evaluation and waterman ship test as per NFPA I.A.D.R.S.
- Members must get physical exam prior to joining the UFEF team and annual physical as per NFPA 1670 sec:18.4.9. Members must also notify the Dive Coordinator and/or Assistant Dive Coordinator if they have a medical status change within 24 hours of said change.
- Members should have a current hepatitis vaccination and a current tetanus vaccination

## 4.3 REQUIREMENT OF TEAM MEMBERS

- All members are required to maintain their own equipment and keep in proper working condition. Members shall immediately notify the Dive Coordinator about equipment failure or loss.
- Members shall on a regular basis, meet the necessary guidelines set forth in these SOG's, and must also maintain personal physical fitness.
- NO member will leave a call, training, or drill without notifying Command and the Dive Coordinator
- Any member within 10' of the water's edge or on a watercraft MUST have on a USCG approved type III or V PFD, unless protection is in place or water less than 2' deep
- Each member is required to respect the jurisdictions that they operate in and conduct themselves in a professional manner
- Each member has the choice not to participate in an operation if they feel it's unsafe or feel that they are not physically up to it.

## 4.4 ANNUAL TRAINING REQUIREMENTS:

- Divers shall meet the Minimum requirements and annual skills test listed in NFPA 1670
- Divers are required to make 25% of meetings and drills to be eligible to dive during operations
- All training sites will be environmentally safe.
- Annual watermanship test completed as per NFPA's I.A.D.R.S sheet
  - Basic SCUBA skill evaluation completed annually
  - Equipment will be checked before and after each training dive by diver and tender
  - All documentation submitted to (DC)

## 4.5 TEAM MEMBER TRAINING REQUIREMENTS

The Underwater Forensics & Educational Foundation is an organization operating at the technician level at dive incidents and shall develop and implement procedures as per the NFPA 1670 & 1006

### All team divers will have to meet the following minimum certifications:

- Current CPR/ First Aid or equivalent card
- Completed nationally Recognized training program in Open Water one
- Minimum age of active members is 18 years old
- All training requirements listed under section 3 must be met to operate during any dive operations
- ERDI 1 or an approved NFPA recognized public safety training program must be completed to operate as a public safety diver
- Every member operating in the "Hot" and "Warm" zone Must meet NFPA standards and follow guidelines outlined in this S.O.G
- All Forensics Dives will be conducted by a certified Underwater Criminal Investigator Diver

## SECTION 5: DIVE PLANNING

### 5.1 Dive Planning Specific to a Dive Site

- Determine the maximum depth and time of each dive
- Dive Safety Officer will be designated for each area that dive operations are conducted
- Choose a search pattern that will be used to limit risks to diver and personnel
- A review of all line pull signals must be done between diver and tender
- Review of what procedures will be followed if a diver is in trouble
- What procedures will be followed when the dive objective is located
- Placement of dive flags or buoys in dive operation area when required for safety
- Need for a chase boat to keep onlookers and other water traffic away from diver operation
- No unauthorized boat traffic should be allowed within 200 to 500 feet of the dive area
- All vehicles must be parked properly to allow for other response vehicles to enter/exit the scene.
- Divers operating below the surface will have pre/post dive 'vital signs' taken by EMS when available

## 5.2 Night Diving Operations

- Due to the hazards of night diving operations, night dives are restricted to certified divers only
- The Dive coordinator will have final say if any night operations are worth the risk
- 100% ready back up diver must be ready before primary diver is deployed
- A 90% safety diver will be suited up and ready to dive whenever divers are submerged
- All divers will have a primary and secondary dive light

## 5.3 Evidence Recovery Dives

All evidence recovery calls, when requested by a law enforcement organization or after the expiration of the 60 minute rescue period (if initially dispatched as a dive rescue), shall be treated as a crime scene. Dive coordinator will obtain permission from the property owner, or ensure that permission was obtained for access, prior to any dive personnel or equipment entering the scene. In the event that the recovery call is in conjunction with an active criminal investigation, permission from law enforcement will be required and/or a warrant issued before dive operations can be performed. All dive recovery operations not having an active warrant and/or the property owner revokes permission, must cease immediately and divers recovered in the safest, most expeditious means possible. The team, when requested, will assist and lend the required support for the Law Enforcement Agency to conduct the investigation, keeping in mind safety and the Risk / Benefit Factor in all operations. All evidence will be marked with a surface buoy, then the item will be mapped and a certified Underwater Criminal Investigation (UCI Diver) or highest ranking diver will perform the recovery. The recovery checklist located in the appendix should be followed at all times and included in the report.

A team member operating as a UCI Diver must be able to provide in detail the following:

- What they did and what they discovered while in the underwater crime scene.
- Need to be able to describe the methods and protocols that were used in the search.
- Describe the process of collection and the means of preservation for the evidence underwater.
- Give details of usage if an electronic imaging unit were used during operations
- Diver must provide evidence of qualifications, training, and education for the recovery
- Be able to describe tender to diver communication signal that were used during operations
- Provide proper documentation for the type of search pattern that was used
- Documentation of how evidence was preserved and packaged
- Provide any video or photos that were used to document the scene
- Maintain chain of custody

The following are a list of minimum requirements that must be taken when handling all evidence:

- The IC and/or Dive coordinator shall designate a person to cordon off the crime scene operations area and maintain personnel in/out log



- Chain of custody must be maintained at all times
- Photos and/or video's must be maintained at all times
- All evidence that will be recovered must first be mapped and documented
- Scene map must include search patterns, evidence location and depth, name of person who made map, Date, time, and "NOT TO SCALE" written on them
- All evidence once logged by dive coordinator must be turned over to law enforcement
- Evidence will be stored/submitted in a sealed container to prevent cross-contamination
- Gloves must be worn by anyone handling evidence
- If cross-contamination does occur, it must be documented in all reports

### **5.3 continued FIREARMS:**

- MUST be treated as loaded at all times
- Divers must make every effort to render a firearm safe without disassembling anything
- Package all firearms separately in the same water it was recovered from
- Package all loose ammunition separately and keep in water, never handle bare handed

## **5.4 Ice Diving**

Ice dives shall be defined as any dives in bodies of water with any portion of the surface covered with ice. Understand that having support personnel near an entry-hole for divers may not always be possible and the proper precautions should be taken

All team member's operating on or within 15' of the ice must have a USCG approved PFD, and be wearing a cold-water immersion suit or dry suit. Any members operating below the ice must be trained by ERDI to the "Technician Level" or a NFPA nationally approved program and specifically certified for Ice Diving.

### **Procedures:**

- Any dive made under the ice shall be tethered with locking carabineer in the locked position. Ice diving without a tether is strictly prohibited.
- Diver's tether shall not exceed 100 feet, with a sub-surface time not to exceed 15 minutes
- While working under the ice, the diver will be restricted to a work area that will not exceed a radius of 50' from the entry hole.
- All support personnel will be responsible for the prevention of freezing equipment
- Traction material around the entry-hole and work area shall be used. Materials that can be used are, but not limited to, snow fence, sand, walk boards, wood chips, mats, etc.

## 5.5 THIN ICE

Any member operating on or setting rigging must be thin-ice certified. Full face mask must be in place and equipment checks completed prior to diver leaving shore. All rigging will be installed by a qualified person and must be monitored during entire operations. Locking carabiners and a redundant air supply **MUST** be used while operating on the ice.

### Thin-Ice procedures:

- Must maintain 100% tie off to shore when operating on ice less than 1" thick.
- Ice sled/shuttle will be used for transport to and from ice hole
- Load distribution anchor system used
- Must be Thin-ice certified to set up rigging and to be a 90% or safety diver
- Whistle blasts will be primary communication between ice hole and land personnel

## 5.6 Swift Water Dives

Swift water shall be defined as any dive operation that involves water moving at a rate greater than one knot (1.15 MPH) as measured at the proposed dive site. That said, water that is moving greater than 0.5 knots may still require swift water search patterns.

### Procedures:

- Dive Coordinator will deploy and maintain communication with a spotter upstream to protect the team from harmful debris that may float downstream
- At least one individual with a throw bag shall be placed downstream as a safety
- No divers shall use fins with large opening, as these holes are potential places for objects on the river bottom to snag the diver, rock boots are recommended
- All divers will enter the water up-stream from objective
- 100% safety diver and tender will be ready to be deployed
- 90% safety diver and tender will be ready and within range of objective

## SECTION 6: EMERGENCY PROCEDURES AND OPERATIONS

### 6.1 LOW AIR EMERGENCY

In the event of a low air or out of air situation the diver is to notify topside via dive pulls of their situation. The Diver will also provide their location and depth, along with their proposed course of action if using comms (switching to alternate air source, removing mask and utilizing bite regulator etc.) Upon receiving the notification from the diver, topside will immediately deploy the safety diver to make contact with the 'out of air' diver and ensure their safety. The Safety Diver will use a contingency line attached to the diver's tether and carry an emergency air bottle. The 90% diver will move up to safety diver

### 6.2 DIVER ENTANGLEMENT

In the event of rescuing an entangled diver, the entangled diver shall stay calm and give information on location and possibly what they are entangled in. At this time the safety diver will enter the water, locate and untangle the diver. At this time, when applicable, the dive comm operator will ensure the safety diver and the entangled diver can communicate directly. Once the safety diver deploys the 90% diver will move up to safety diver.

### 6.3 DIVER INJURY, ENTRAPMENT, OR LOSS OF COMMUNICATIONS

Each diver will utilize the dive comm when applicable. The comm rope will be securely attached to the diver's harness and, in the event of loss of verbal communication, will communicate by the line pull signals stated in this S.O.G. In the event of a diver injury, entrapment, loss of communication or disconnect, the safety diver will be deployed to the distressed diver's last know location. Upon locating the distressed diver, the safety diver will evaluate the situation. Upon the safety diver entering the water, the 90% diver will become the topside safety diver. The diver in distress shall try their best to keep communication with the tender so it makes it easy for the safety diver to locate the distressed dive. This shall be pre-planned in the briefing of the dive before anyone enters the water.

### 6.4 Urgent Message Protocol

Any Team Member that needs to convey a rapid change in condition or situation can temporarily halt all other radio traffic by initiating the "URGENT MESSAGE" protocol. Examples include but are not limited to, incoming watercraft traffic, sudden change in water conditions, debris and hazards in water, etc.

#### PROCEDURE:

- Declare "URGENT MESSAGE" over Radio
- Give/Relay the hazard to the Dive Coordinator
- The Dive Coordinator can only Terminate an "URGENT MESSAGE" after initiated

## 6.5 MAYDAY Protocol

Any below - surface emergency where a diver is in distress or missing shall initiate the "MAYDAY" Procedure. Examples include but are not limited to:

- lost communication with diver (no voice or line pull signals)
- emergency pull signals (as stated in S.O.G.) are given by diver to tender

### PROCEDURE:

- The diver experiencing distress shall:
  - 1) Notify their tender of the problem either through voice communication or pull signals
- The tender shall:
  - 1) Inform the Dive Coordinator of the problem
  - 2) Mark the line if he/she no longer feels the diver on the line
  - 3) A marker shall be placed at the location the tender is standing. A second marker will be placed indicating the direction the lost diver was traveling.
  - 4) Immediately instruct the safety diver to follow the distressed diver's tether down to assist. The 90% diver will now assume the role of safety diver
- The safety diver shall:
  - 1) (If the diver-in-distress became separated from their tether...) Swim in a circular search pattern starting from the center of the diver-in-distress' last known location
  - 2) Once found and free of entanglement, the safety diver will confirm a contingency strap/webbing is attached to the distressed diver's line and both divers will begin a controlled ascent together.
  - 3) Upon surfacing, the safety diver will release/ditch the diver-in-distress' weight belt and inflate their BCD device
- The 90% ready diver will then assume the duties of the safety diver
- Upon hearing news of a diver-in-distress from the tender, the Dive Coordinator shall
  - 1) Declare a "MAYDAY" over the radio and halt all diving operations
  - 2) Request an additional dive team response
  - 3) Activate EMS crew that is standing by and dispatch a second EMS crew
  - 4) Request a Personnel Accountability Report (PAR) from all other crews operating onsite
- Dive Coordinator shall declare " MAYDAY TERMINATED" once situation is resolved

## 6.6 Diver Injury Procedures

Subsequent to an incident in September 2011, any diver exhibiting signs of Decompression Illness shall be treated by EMS and transported by the most expeditious means necessary to Jacobi Medical Center, 1400 PELHAM PARKWAY SOUTH, NEW YORK, NY 10461-(781-918-6300). This is the closest 24 hour a day, 7 day a week Decompression Chamber. This facility also has a helicopter landing pad and has received North Star patients in the past. The coordinates of this facility are 40°51'14.6"N 73°50'45.4"W (40.854056, -73.845944).

- All medical monitoring of the diver before and after the dive shall be done by EMS and proper forms shall be filled out, signed, dated and put into the diver log folder.

## 6.7 Below Surface Operations

- Every diver will have their gear inspected by another diver or tender prior to entering water
- Prior to lifting heavy objects from the bottom all divers will leave any area that may be considered unsafe if the extrication method fails
- All Lift bag operations will be completed only by experienced members in lifting
- All efforts must be taken to isolate or shutdown any equipment/systems at the incident that present a potential hazard to the team. Follow lock-out, tag-out procedures
- Unless they are entangled, public safety divers will not cut any lines until their purpose is known and permission is given from top side
- A dive plan will be established for each public safety diver, tender and/or watercraft operator prior to dive operations starting, everyone must fully understand the task they are being asked to perform
- When doing respective dives, dive tables or computers must be used with at least 1HR surface-interval
- When possible, all Public Safety Divers should be tethered to a surface tender. When situations arise that prevent a tender-tether from being used, a dive buddy may be utilized
- When a Public Safety Diver Enters a Pipeline, Wreck, Structure, Tunnel, or any other restricted underwater area, another tethered Public safety diver shall be available at the point of entry to tend the diver who enters the enclosed space with a separate line.
- When returning aboard a vessel from the water, the weight belt MUST be removed first
- Diver shall not dive if taking any medication, must inform (DC) if have any colds or sinus congestion

## SECTION 7: DIVER COMMUNICATION SIGNALS

### 7.1 LINE PULL SIGNAL

- All divers will use a safety line when diving conditions permit.
- The following line and hand signals must be committed to memory by all members
- When any signal is given either by tender to diver or diver to tender it shall be acknowledged by sending it back.

#### **Pull Signals** (Bold items represent diver command)

- 1 Pull- Stop, face rope, **OK**
- 2 Pulls-Move **IN** towards Tender
- 3 Pulls-Move **OUT** away from Tender
- 4 Pulls- Move **LEFT**
- 5 Pulls- Move **RIGHT**
- 6 Pulls- (from diver TO tender) **ITEM FOUND** (from tender TO diver) **RETURN TO SURFACE**
- 3+ 3 +3 Pulls - **Send Help**

### 7.2 DARK WATER SIGNALS

This will be the only diver-to-diver signal communication utilized and any signal given by one diver should be acknowledged by the other.

#### **DARK WATER SIGNAL DIVER TO DIVER**

- **OK** = One hand Squeeze
- **FORWARD / BACK** = Primary diver squeezes Safety diver and pushes the Safety diver in direction the Primary diver wants to move
- **HELP** = 4 Squeezes
- **STOP/HOLD** = 1 Squeeze
- **EMERGENCY** = A Shaking Motion
- **UP** = Turn Diver Thumb Up
- **DOWN** = Turn Diver Thumb Down
- **START OVER** = Multiple Taps on palm

## 7.3 UNDERWATER CONTINGENCY SIGNALS

After signaling for help from the Safety diver the Primary diver must remain calm and control their breathing and place one hand on the harness carabineer. The Safety diver shall descend to the distressed diver and 90% diver will move up to safety diver.

**The following signals must be committed to memory for all divers.**

- **ENTANGLED** = Primary diver takes Safety diver's hand and makes a circular motion.
- **ENTANGLEMENT LOCATION KNOWN** = Put Safety diver's hand on location
- **LOW ON AIR** = Primary diver takes Safety diver's hand and puts it to the Primary diver's face mask.
- **OUT OF AIR** = Primary diver takes Safety diver's hand and makes a slashing movement across the Primary diver's face mask.
- **SOMETHING WRONG** = Primary diver squeezes and twists any body part on Safety diver

## 7.4 SURFACE HAND SIGNALS

Rescuers and tenders shall be familiar with the following hand signals for surface operations:

- OK — hand on top of head
- Distress — hands waving in crisscross method
- Stop — arms crossed forming an X
- Pressure Check - Tapping of fingers on palm — like a gauge console
- Pull in — pointing arm towards retrievers

## **SECTION 8: CONDUCTING A SEARCH**

### **8.1 General Overview:**

- Carefully consider all available information and mark the search area.
- Each team member shall be familiar with the basic search patterns and all signals.

### **8.2 Boat Based Search:**

- The boat shall be under the command of a qualified boat operator at all times.
- All personnel in the boats shall wear PFD's (including divers when the BCD is not on)
- Two Divers dressed out with dry suits and full SCUBA equipment shall be in the boat.
- All other necessary materials to support diving operations shall also be placed in boats.
- All strainers are to be checked. Boats shall maneuver in any tight areas Slow and Careful.
- Reach poles can be used but care is to be taken not to jab, this may cause damage to a body.

## **SECTION 9: BODY RECOVERIES**

### **9.1 What Affects Body Movement**

- A body will drop to the bottom at an approximate rate of 1/2 a foot per second. This is a rough figure subject to water conditions, body conditions etc.
- A guideline is that if you can swim against a current, that current won't move a body once it is on the bottom
- The current can affect body movement when the body is dropping to the bottom and during the re-floatation process
- Thermoclines can alter body movement, prevent the body from reaching the bottom or prevent re-floatation
- Waves created by wind on a lake do not have much effect on body movement when the bottom is deeper than twice the wave's height.



## 9.2 Search Guidelines

- Last Seen Point is perhaps the most important consideration in body recovery or rescue. How precisely this point is located will determine how long diving operations will last.
- Interview all possible witnesses and, when interviewing, RESTRICT QUESTIONS ENTIRELY TO WHERE and WHEN. Children can make good witnesses because they are often not as emotionally involved as adults. Obtain parent's permission when possible.
- A witness who lined up the drowning victim with a landmark will often be more helpful. Just remember that most people cannot accurately estimate distances over water. In this instance, send a diver out and direct the diver with hand signals until the witness indicates the diver is at the last seen point. The diver should drop a buoy at this spot.
- When the Body is found an overview of the body should be done, then be marked with a buoy to the surface, the recovering diver will conduct an investigation and then recovery

## 9.3 Signaling Body Recovery

- Signaling the Body Has Been Found - A buoy reaching the surface, followed by the appearance of a diver, will be the silent signal the body has been found. This finding will be quietly passed to the Dive Coordinator. Alternately, the diver can verbally pass "signal 200" or "pizza in the box" to the operator of the comm system while underwater to signify the body has been found. Care should be taken to maintain professionalism during this process, as potential family members of the deceased are likely within sight or earshot.
- Marking the Body. Secure a buoy to the body and follow the buoy line up to be sure the buoy has reached the surface. Tie off the line at the buoy to prevent further release of line due to wind or current.

## 9.4 Record Keeping

- Depth at which body was found
- Water Temperature where body was found
- Current. Present or absent. If present, estimate as best you can.
- Visibility
- Body Position. This will usually be semi-fetal.
- Body Condition. Is there evidence of injury, rigor mortis?
- Evidence of Unusual Body Injury. If there are any findings to suggest a homicide, or any unusual injury to the body, a sworn officer shall evaluate all findings

## 9.5 Potential Health Hazards of Decomposing Bodies

- In the event of a body recovery, all personnel and equipment must be decontaminated by a decontamination team
- Minimizing Risk of disease Transmission
- Surgical Gloves shall be worn under a diver's rubber gloves during any body recovery mission. All individuals coming into direct contact with the body on the surface shall also wear these gloves.
- *NOTE:* The only time we will undertake a body recovery, will be with the clearance of or under the direction of the appropriate Law Enforcement Agency. Once we get into a Recovery operation, the site becomes a crime scene and subject to all the rules of evidence and police procedure
- When recovering, locating, securing, or packaging evidence, all documentation and the chain of custody must be maintained. Every reasonable effort must be undertaken to have a UCI Diver perform the recovery. The UCI Diver will document the recovery process as appropriate and required.

## SECTION 10: VEHICLE RECOVERY

### 10.1 General Overview

- A tow truck should be summoned when the initial call is received, even though the Rescue Mode may be in doubt.
- A decontamination team shall be dispatched to decontaminate Diver's.
- Victim Survival. Evaluation of the accident scene and the vehicle's condition can be good indicators of the victim's chances for survival. If there is evidence of additional trauma because of an accident chances of survival decrease for an immersed victim when compared to a non-traumatic drowning. This should be remembered when determining a risk/benefit factor for a particular operation.
- Air Pocket Myth. The possibility there will be an air pocket in the submerged vehicle is unlikely.
- Upside Down Vehicle. When a vehicle sinks in water deeper than its length, the vehicle will often turn upside down. This position can be very disorienting for the diver.

### 10.2 Finding the Submerged Vehicle

- Entry Point. This is usually quite easy to determine when there is a witness. In the absence of a witness, or with minimal information, the vehicle's entry point should be determined as closely as possible prior to initiating diving operations. This is usually possible by looking for tire marks or evidence of local damage to the environment.
- Underwater Location. Air bubbles or slicks (gas or oil) on the surface are often good markers for a vehicle's location. These signs frequently indicate the vehicle has not been immersed for an extended period of time and are often more easily seen when viewed from height.

## 10.3 Approach to an Underwater Vehicle

- Cautiously. A vehicle can be hazardous due to broken glass or jagged metal. Approach with extreme caution, especially in limited visibility.
- Downstream Approach. When current is present, always approach a vehicle from a downstream side.
- Area Search. Always search the area surrounding the vehicle for an ejected victim. Check the shore and surface of the water for babies and or small toddlers.
- Identify the license plate number as soon as possible to have the Police Dept. determine registered owner information.
  - 1) Call the owner's residence and any other available telephone numbers to determine, if possible, how many individuals were in the vehicle.

A Hazardous Materials team shall be summoned to all submerged vehicle calls to mitigate any potential spill or spill risk. In addition, a DECON team should be put on automatic standby.

## 10.4 Rescue Mode

- The team will function in this mode if the vehicle has been underwater less than an hour and the chance for the victim(s) survival appears reasonable.
- Objective in a Rescue Mode - the primary objective is removing the victim(s) from the vehicle as soon and safe as possible. However, the condition of the vehicle may not permit removal of the victim(s). In this instance, preparations should have been made to have the vehicle removed by tow truck.

## 10.5 Recovery Mode

- Done at a much slower pace than the Rescue Mode.
- Have the diver determine the position and condition of the vehicle. Later litigation can raise the issue of how much damage the vehicle sustained during recovery.
- Take underwater photographs and/or video when possible.
- Search for the license plate if not on vehicle.
- Initiate proper search pattern for bottom conditions. Can start with an arc search utilizing a Tender-to-Diver/Tender-to-Diver.

When applicable place a buoy on each corner of the vehicle, and then take surface pictures for orientation and location of the vehicle. If markers for each corner are not available place the buoy in the center of the vehicle and note what direction the front of the vehicle is facing.

## 10.6 What NOT to Do

- Do not enter a submerged vehicle
- Do not remove the victim(s) when underwater unless the vehicle is not being recovered.
- Never open any compartments including the trunk, interior glove box/center console and any exterior boxes (truck tool boxes etc.). This action can disturb potentially valuable crime scene information; cause buoyant contents to depart the vehicle unexpectedly; or release unexpected pockets of air which may negatively affect divers.
- If a door or window is open, make a note of the specific door or window. Do not try to close prior to recovery.

## 10.7 Vehicle Removal

- Use lift bags when applicable, Attach a towing strap to the axle or secure spot on the vehicle closest to the exit point.
- During removal from the water, watch water coming out of vehicle for any interior contents. Retrieve anything washed out of the vehicle.
- **DO NOT RECOVER A VEHICLE WITH DIVERS IN THE VICINITY. DIVERS SHOULD BE WELL CLEAR OF VEHICLE BEFORE ATTEMPTING RECOVERY.**
- Vehicle Evaluation After Removal From the Water
- Use of lift bags shall only be done by trained personnel

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## **SECTION 11: TEAM FORMS**

### **11.1 Medical**

- Member's medical history information will be filled out, signed, and dated by all divers, then given to the Dive Coordinator and/or Assistant Dive Coordinator.
- Members should consult a physician before joining UFEF Dive Team.
- The following immunizations are strongly suggested for all team members.
  - Tetanus should be current. If there is any question, check with your physician.
  - Hepatitis B Vaccination is now available and it's important for all public safety personnel. Members may consult their personal physician.

### **11.2 Water Rescue Operations**

- The Call Out Form is a summary form, which will be filled out for each operation.
- Pre-Operation Checklist is to be completed prior to each dive. There are no exceptions! Support Personnel shall conduct the equipment check.
- Body Recovery Report should be used whenever a body has been recovered from the water environment, whether underwater or on the surface. A copy will be forwarded to the Medical Examiner upon request. Any rescuer that comes in contact with the body will fill out the BRR.
- The Vehicle Recovery Checklist should be used when a vehicle is recovered from the water environment. This will be forwarded to the Police Department upon request.
- All forms required for each operation must be filled out completely.

### **11.3 Equipment Check Out**

- Each member of the team will be briefed on the use of Airway and Oxygen Administration Kit.
- Full facemask will be checked out in the pool prior to being put in service.
- All members shall be familiar with the use of rope tug communications and all signals must be memorized.
- All members will be required to inspect personal flotation device, harness, and helmets.
- All divers must don all equipment to ensure proper fit.
- All equipment is to be checked before and after all dives to ensure proper operation.

## **SECTION 12: ACCOUNTABILITY PROCEDURES**

All Team members should have proper ID at all times while operating in or around any dive operations. All Tenders, PSD Divers, and Qualified Divers should have ID on them while operating on scene.

All team members must be cleared by Dive Coordinator and/or the Dive Safety Officer before entering any Hot zones.

A Hot zone will be established where dive operations will take place. Plenty of room must be established for divers, equipment and personnel. The Dive Safety Officer will check everyone in and out of Hot Zone. The Dive Safety Officer will also be responsible for making sure no unauthorized personnel enter the Hot Zone for any reason.

All Divers when applicable will be cleared by the medical staff and present the Dive Safety Officer with their ID card before they enter the Hot Zone. The Dive Safety Officer will Log the Diver and tender, Safety Officer will keep their ID card until the diver is leaving the Hot Zone.

All Divers when applicable will also be cleared by medical staff after dive operations are complete and the diver is DECONED and clear of Hot Zone

## SECTION 13: TEAM DOCUMENTS

MEMBER S.O.G ACCEPTANCE_____	APPENDIX A
MEMBER CONTACT INFO _____	APPENDIX B
DIVE LOG & PRE-DIVE CHECKLIST _____	APPENDIX C
CHAIN OF CUSTODY _____	APPENDIX D
CRIME SCENCE SIGN IN/OUT LOG _____	APPENDIX E
CRIME SCENE SKETCH _____	APPENDIX F
WITNESS INTERVIEW _____	APPENDIX G
VEHICLE RECOVERY CHECKLIST _____	APPENDIX H
BODY RECOVERY CHECKLIST _____	APPENDIX I
CONTAMINATED WATER PROTOCOLS _____	APPENDIX J
POST DIVE HEALTH _____	APPENDIX K
EXPOSURE CONTROL FORM (2 PAGES) _____	APPENDIX L
5 MIN NEURO EXAM _____	APPENDIX M
I.A.D.R.S ANNUAL SWIM & SCUBA TEST _____	APPENDIX N
EMERGENCEY ACTION PLAN _____	APPENDIX O
DIVE OPERATION PLANNING _____	APPENDIX P

**APPENDIX A**

MEMBER S.O.G ACCEPTANCE:

Member Name:\_\_\_\_\_

Member Address:\_\_\_\_\_

Member Telephone:\_\_\_\_\_

Member Email:\_\_\_\_\_

THE MEMBER NAMED BELOW HAS ACKNOWLEDGED THESE CURRENT SOG's FOR THE UNDERWATER  
FORESNSICS & EDUCATIONAL FOUNDATIONS AND WILL ABIDE BY ALL UNLESS THERE IS A SAFETY  
ISSUE.

SIGNATURE

DATE

\_\_\_\_\_